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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/720,381	11/25/2003	Byeong-Hoon Lee	P24464	4276
7055	7590	01/09/2006	EXAMINER	
GREENBLUM & BERNSTEIN, P.L.C.			SPISICH, GEORGE D	
1950 ROLAND CLARKE PLACE			ART UNIT	
RESTON, VA 20191			PAPER NUMBER	
			3616	

DATE MAILED: 01/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/720,381	Applicant(s) LEE, BYEONG-HOON	
	Examiner George D. Spisich	Art Unit 3616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2/24/04</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION***Drawings***

The drawings are objected to because Figure 6 and Figure 8 do not appear to properly show Applicant's invention in operation. In Fig. 6, it appears that the pre-collision position of the rotational bracket is towards the right side of the elongated hole. Examiner does not understand this to be accurate as it should be shown to be "engaged" at the left end of the elongated hole. Furthermore, Fig. 6 does not completely show the details of the elongated hole which include a groove, that Examiner understands would be on the left end of the groove in Fig. 6. In Fig. 8, as Examiner understands, the steering column is shown in a post-collision state (after secondary collision), and the strap (108) is still shown to have a gap between itself and the deformation member (153). It is Examiner's understanding that member 153 would contact element 108 in collision and should be shown to remain contacted in this Figure. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes

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made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1, lines 3-4, "in whole" is unclear.

In claim 1, line 3, "supported to" and "thereof" is unclear. The phrase "supported to" should be - - supported by - -. With respect to "thereof", it is unclear if the upper and lower portions are of the body or of the steering column.

Claim 1, line 13 is unclear. It is not clear what elements are including in the "sliding movement" claimed. Examiner assumes the sliding movement is between the slide bracket and the connecting shaft and suggests replacing "relative movement" in

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line 12 with - - sliding movement with respect - -. This correction allows for the "a sliding movement" in line 13 to be changed to - - the sliding movement - -.

Claim 2, line 4, is unclear. It is unclear to claim that the bush is "inserted onto" the shaft. The term inserted is not accurate in this case.

Claims 3-6 are unclear. It is unclear to claim that there is a "deformation-inducing part provided in" the slide bracket. It is not accurate to use the word "in" in this instance.

Claims 4 and 6 are unclear. From the specification, it is understood that Applicant considers that (1) the bush, (2) the friction of the connecting shaft and the long hole, and (3) the strap (108) to be a shock absorber. In claim 1, there is claimed a shock absorber which as claimed is an element (therefore not the friction aspect of the shaft and the hole). Claims 4 and 6 claim the strap (108) and these claims depend from claim 2 which claims the bush. Therefore, in claims 4 and 6 there must be a bush, a strap and a shock absorber element (additionally from the bush and strap). This is not shown by Applicant and Examiner understands one of these elements to be claimed in duplicate in Claims 4 and 6.

Claims 5 and 6, lines 5 are unclear. Examiner understands the relative movement claimed is "with respect to" the connecting shaft not simply the bracket moving the connecting shaft. Examiner suggest replacing "relative movement to" with - - relative movement with respect to - -.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over GB 2 365 826 (provided in Applicant's IDS) in view of JP2000-062623.

GB '826 discloses a shock absorbing steering column of a "low tilt type", the shock absorbing steering column having a steering shaft and a steering column for rotatably supporting the steering shaft (inherent) and the steering column is supported to a body at upper and lower portions of the steering column thereof to allow for tilt operation, the shock absorbing steering column comprises a rotational bracket (6), a slide bracket (A) fixed to the steering column tube and having a long hole (A1) formed along the longitudinal direction of the steering column tube. Although GB '826 discloses element (10) that is broadly considered a connecting shaft that passes through "the long hole" of the slide bracket (Applicant has not claimed a long hole on each side of the bracket which a single shaft extends through both holes) and a shock absorber that "allows" (as it does not impede) the slide bracket and the connecting shaft to perform relative movement to each other when a vehicular collision occurs and absorbing shock during a sliding movement, Examiner is not relying on this interpretation.

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However GB '826 does not disclose a lower mounting bracket fixed to the body and the rotational bracket (6) fixed to the lower mounting bracket.

JP '623 discloses a shock absorbing steering column arrangement having a lower mounting bracket (28) for supporting a secondary bracket (24) that engages with a slide bracket (48). Furthermore, there is a shock absorbing strap (52) shown in Figure 5 that is connected to the connecting shaft and has a free end. Near the free end, the strap engages a bracket and is deformed by the bracket during sliding motion due to a vehicle collision.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the steering arrangement of GB '826 by mounting the rotational bracket (6) on a lower mounting bracket as taught by JP '623 and providing a strap type shock absorber that absorbs energy during sliding motion due to a vehicle collision so as to allow for a greater range of movement during a collision and enhance energy absorption.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over GB '826 in view of JP '623 as applied to claim 1 above, and further in view of McCarthy et al. (USPN 6,575,497).

GB '826 and JP '623 have been discussed in the prior rejection. However, neither reference discloses a groove formed at the long hole and a bush on the connecting shaft and the bush has a nose that is inserted into the groove.

McCarthy et al. discloses a shock absorbing steering column having a sliding bracket with a long hole. As the long hole includes a protrusion prior to the end, the end is considered to have a "groove". Furthermore, the connecting shaft (42) includes a bush having a nose that is inserted into the "groove".

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the connecting shaft arrangement of GB '826 in view of JP '623 to include a groove at the long hole and have a connecting shaft having a bush having a nose inserted into the groove of the long hole as taught by McCarthy et al. so as to provide an efficient and effective manner of providing shock absorption during the sliding motion of the steering column.

Claims 3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over GB '826 in view of JP '623 as applied to claim 1 above, and further in view of Reife (USPN 6,655,716).

GB '826 in view of JP '623 has been discussed in the prior rejection. However, these references do not disclose a deformation inducing part having a guide part on the bracket that continuously deforms and guides the strap in "U-shape" during the sliding motion which occurs due to a vehicle collision.

Reife discloses as Prior Art Figure 1, a steering column shock absorbing arrangement having a deformation member (15) which performs continuous "U-shape" deformation during vehicle collision and further having a bottom member (unnumbered)

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which is a guide part for supporting the free end of the strap and guiding the strap for the continuous "U-shape" deformation.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the slide bracket of GB '826 which engages the strap which is connected to a connecting shaft as taught by JP '623 by providing a deformation inducing part as taught by Reife on the end of the slide bracket so as to provide even, consistent and controlled deformation of the strap member and therefore provide improved shock absorbing.

Claims 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over GB '826 in view of JP '623 and further in view of McCarthy et al as applied to claim 2 above, and further in view of Riefe (USPN 6,655,716).

GB '826, JP '623 and McCarthy have been discussed in the prior rejection. However, these references do not disclose a deformation inducing part having a guide part on the bracket that continuously deforms and guides the strap in "U-shape" during the sliding motion which occurs due to a vehicle collision.

Reife discloses as Prior Art Figure 1, a steering column shock absorbing arrangement having a deformation member (15) which performs continuous "U-shape" deformation during vehicle collision and further having a bottom member (unnumbered) which is a guide part for supporting the free end of the strap and guiding the strap for the continuous "U-shape" deformation.

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the slide bracket of GB '826 which engages a strap which is connected to a connecting shaft as taught by JP '623 and further including a groove in the long hole and a bush that has a nose inserted into the groove as taught by McCarthy, by providing a deformation inducing part as taught by Reife on the end of the slide bracket so as to provide even, consistent and controlled deformation of the strap member and therefore provide improved shock absorbing.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Manwaring et al. (USPN 6,799,486), Cooper et al. (USPN 6,862,947), Li et al. (USPN 6,802,536), Jurik et al. (USPN 6,170,873), Yabutsuka et al. (USPN 6,378,903), Ben-Rhouma et al. (USPN 6,234,528), Dufour et al. (USPN 6,183,012), Riefe et al. (USPN 6,769,715), Riefe (USPN 6,655,716), Duval et al. (USPN 6,578,872), Riefe et al. (USPN 5,605,352), Yamamoto et al. (USPN 6,523,432), JP2002-337700, JP2003-026006.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to George D. Spisich whose telephone number is (571) 272-6676. The examiner can normally be reached on Monday-Friday 9:00 to 6:30 except alt. Friday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Dickson can be reached on (571) 272-6669. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

George D. Spisich
December 31, 2005



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